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In the Claims:

Claims 1-6 and 14-32 have been cancelled.

Claim 7 has been amended below.

1- 6. (cancelled)

7. (currently amended) A method of forming an image having edge placement accuracy to a small fraction of a pixel using an image transducer having coarse pixels, the method comprising the steps of:

- a) defining a fine grid pattern comprising a plurality of fine-grid pixels corresponding to ~~[[the]]~~ a desired image;
- b) overlaying the coarse grid pixel array on the fine grid pattern and determining a proportion p of the number of exposed fine grid pixels making up the portion of the fine grid pattern formed in each coarse grid pixel;
- c) applying the proportion p to a number of pulse-exposures (2^n-1) to be combined to obtain an n -digit binary integer number N corresponding to each coarse-grid pixel;
- d) creating n different binary patterns based on the binary numbers N , wherein the pattern number is based on the order of the digit starting from the right and whether or not the pixel is exposed depends on whether the digit is a one or a zero; and
- e) imaging the n patterns in sequence by pulse-exposing ~~[[the]]~~ an m^{th} pattern 2^{m-1} times for a total of 2^n-1 pulse-exposures, thereby forming a set of superimposed images having an edge placement resolution substantially equal to the width of a coarse grid pixel divided by (2^n-1).

8. (original) A method according to claim 7, wherein said step e) includes

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the step of recording the superimposed image in a high-contrast photosensitive medium.

9. (original) A method according to claim 7, wherein said step e) includes the step of displaying the superimposed image such that it appears to the eye as a single time-averaged image.

10. (original) A method according to claim 7, wherein said step d) includes modifying the n binary patterns to compensate for image edge position errors arising from optical proximity effects and/or the non-linearities in the edge profile of a diffraction limited image.

11. (original) A method according to claim 7, wherein said step d) includes the step of defining each coarse-grid pixel as "on" or "off" for each pulse-exposure based on the sequence of binary digits, 1s and 0s in the associated binary number N , so that if the first digit in N is a one, the corresponding pixel is exposed in the first binary pattern, and if the second digit in N is a zero then the corresponding pixel is unexposed in the second binary pattern, and so on.

12. (original) A method according to claim 7 of performing step-and-repeat lithography, further including the steps of:

- i) storing the n different binary patterns in corresponding memory arrays in electrical communication with the image transducer; and
- ii) recording the superimposed image in a high-contrast photosensitive medium covering a substrate by stepping-and-repeating multiple field exposures, where each field exposure consists of 2^n-1 partial exposures and the field exposures are butted together on the substrate to form a contiguous printed image covering an area larger than the image of the image transducer.

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13. (original) A method according to claim 12, wherein in step i) the field exposures are tapered at the edge of the image transducer, and in step ii) the fields are overlapped slightly to ensure a contiguous printed image having no abrupt discontinuities caused by small stepping errors.

14-32. (cancelled)